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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,461	03/31/2000	Charles J. Cohen	CYB-05902/03	2113

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EXAMINER

VU, THANH T

ART UNIT	PAPER NUMBER
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2174

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/540,461

Applicant(s)

COHEN ET AL.

Examiner

Thanh T. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-12, 14, 16 and 19-21 is/are rejected.
- 7) ☒ Claim(s) 7, 13, 15, 17 and 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Oath/Declaration

1. Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c).

Specification

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

The tables after the claims are not proper. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant fails to describe in the specification wherein the target is a group of people making gestures and the gesture-recognition modules recognize such gestures.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 1-3, 8-12, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Nguyen (U.S. Pat. No. 6,072,494).

6. Per claim 1, and Nguyen teaches a method of behavior recognition, comprising the steps of: analyzing a gesture-making target utilizing a plurality of gesture-recognition modules, each outputting information relating to target location and gesture type (figs 2 and 3; col. 2, lines 6-14); designating certain target locations and gesture types as predefined behaviors (figs 2 and 3;

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col. 2, lines 6-14); comparing the information from the gesture-recognition modules to the predefined behaviors (figs 2 and 3; col. 2, lines 6-14; col. 7, lines 27-31); and in the event of a correlation between the output of the gesture-recognition modules and a particular predefined behavior, determining that the behavior of the target includes the particular gesture (col. 5, lines 60-63).

7. Per claim 2, Nguyen teaches the method of claim 1, wherein the target is a human being (fig. 2, col. 5, lines 48-51).

8. Per claim 3, Nguyen teaches the method of claim 1, wherein the target is a group of people (col. 3, lines 15-21; It is inherent that a dynamic background might have more than one person in it).

9. Per claim 8, Nguyen teaches the method of claim 1, wherein the step of analyzing the gesture-making target includes imaging the target (fig. 2; col. 5, lines 48-51).

10. Per claim 9, Nguyen teaches the method of claim 8, further including the step of generating a bounding box around the target (col. 7, lines 55-65).

11. Per claim 10, Nguyen teaches the method of claim 8, further including the step of using an operator to find the edges of the target (fig. 5B; col. 7, lines 55-65).

12. Per claim 11, Nguyen teaches the method of claim 1, further including the steps of: receiving a file of recognized gestures along with their vector descriptions; and comparing the outputs of the gesture recognition modules to the vector descriptions (col 7, lines 27-31).

13. Per claim 12, Nguyen teaches the method of claim 1, further including the step of treating a gesture as a dynamic gesture comprising one or more one-dimensional oscillations (fig. 2; col. 6, lines 18-20).

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14. Per claim 14, Nguyen teaches the method of claim 12, further including the step of deriving complex dynamic gestures by varying phase relationships (col. 5, lines 10-15).

15. Per claim 16, Nguyen teaches the method of claim 12, further including the step of comparing to the next position and velocity of each gesture to one or more predictor bins to determine a gesture's future position and velocity (col. 9, lines 25-40).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen (U.S. Pat. 6,072,494) in view of Freeman (U.S. Pat. No. 5,454,043).

18. Per claim 4, Nguyen teaches the method of claim 1, but does not teach the target is a human hand. However, Freeman teaches a gesture-making target is a human hand (fig. 1 and 2A). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the hand gesture as taught by Freeman in the invention of Nguyen in order to provide hand gestures which give more flexibility for convenient computer control.

19. Per claim 5, Nguyen teaches the method of claim 2, but does not teach the gesture-recognition modules output information relating to static and dynamic gestures. However, Freeman teaches the gesture-recognition modules output information relating to static and dynamic gestures (fig. 1 and 2A; See abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the hand gesture as taught by

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Freeman in the invention of Nguyen in order to provide static and dynamic hand gestures which give more flexibility for convenient computer control.

20. Per claim 6, Freeman teaches the method of claim 5, further including the steps of: deriving the start position of the target, the end position of the target, and the velocity between the start and end positions (52-60); comparing the velocity of the target to a threshold value; and identifying the gesture as a static gesture if the velocity is below the threshold value, otherwise, identifying the gesture as a dynamic gesture (col. 3, lines 31-38; col. 4, lines 25-30; col. 4, lines 50-56).

21. Claims 19, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen (U.S. Pat. 6,072,494) in view of Qiao et al. ("Qiao", U.S. Pat. No. 6,075,895). Nguyen teaches the method of claim 1, but does not teach the target includes a robot, a weapon, or a vehicle. However, Quiao teaches the target includes a robot, a weapon, or a vehicle (col. 12, lines 23 -30; col. 12, lines 44-48; col. 1, lines 10-11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include gesture-making targets as taught by Quiao in the invention of Nguyen in order to provide various gesture-making targets which give more flexibility of computer control.

Allowable Subject Matter

22. Claims 7, 13, 15, and 17-18 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kirly et al (U.S. Pat. No. 6,249,606) teaches a method and system for gesture category recognition and training using a feature vector.

Courtney (U.S. Pat. No. 5,696,755) teaches a motion base event detection system and method.

Smith et al. (U.S. Pat. No. 6,128,003) teaches a hand gesture recognition system and method.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh T. Vu whose telephone number is (703)-308-9119. The examiner can normally be reached on M-F 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine L. Kincaid can be reached on (703) 308-0640. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-746-7239 for regular communications and (703)-746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

T. Vu
February 24, 2003

Kristine Kincaid
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